

fpt\_01, the application component 182 presents the number 1fpt7 the user. Based on the selected user parameter "01", the presented number will be "1.7".

The following contents shown in Table 2 may be stored in the lookup object in connection with the currently-described example.

fpt_49	rule for floating point ","
fpt_01	rule for floating point "."

Table 2

The above-described example for floating point representation may also be taken in the other direction, that is, receiving a user input and converting the user input into an internal representation for handling by the application, with the internal representation being independent of the user parameter. In this case, the lookup component 183 can use the same resource function to convert the German version representation of "1,7" into 1fpt7 and the U.S. version "1.7" into the internal version 1fpt7.

The lookup component 183 can perform similar operations to present a date or current time to a user, who selected a specific user parameter. First, when the resource program receives an instruction to present the current date to a user, the resource program can call a function for obtaining the date in an internal format that is independent of the user parameter and can then proceed to convert the internal representation of the local date using the selected user parameter into a corresponding localized representation of the date using a resource function performing a corresponding conversion.

The embodiment consistent with present invention that is described with reference to Fig. 5a allows the resource program to efficiently present a user with localized information by converting a user parameter independent resource identifier into a string identifier comprising the resource identifier and the user parameter and performing a lookup operation in a lookup object using the string identifier for retrieving localized resource data.

Referring to Fig. 5b, that figure illustrates a flow chart of a process performed by the resource program in accordance with another embodiment consistent with methods, systems, and articles of manufacture consistent with the present invention. Similar to the embodiment described with reference to Fig. 5a, the embodiment depicted in Fig. 5b illustrates steps performed by the resource program for retrieving resource data for presentation to one or a plurality of users.

Fig. 5b illustrates an example wherein the lookup component 183 retrieves one of a plurality of lookup objects that correspond to selected user parameters. Thus, for each user parameter a lookup object is available that stores resource identifiers in association with resource data. Since the steps for setting a user parameter (step 21), executing an application (step 22), and reading a resource identifier (step 23) are similar to the steps described with reference to Fig. 4, description starts at an entry point S23, that is, after step 23 described with reference to Fig. 4.

Referring to Fig. 5b, in step S3b1, the lookup component 183 calls a dictionary function for obtaining one of a plurality of lookup objects corresponding to the user parameter, wherein the retrieved lookup object links the resource identifier with the resource data dependent on the selected user parameter. The dictionary function thus selects at least one of a plurality of lookup objects in dependence on the selected user parameter.

The dictionary function may receive the selected user parameter, for example, from a session object or application object, and may accordingly select at least one of a plurality of lookup objects in correspondence to the selected user parameter. The lookup object may be loaded, for example, from a session object or an application object, into the environment of the application such that the lookup function may access the identified lookup object for obtaining resource data.

In step S3b2, the lookup component 183 performs the lookup operation using the resource identifier for obtaining the resource data, for example, for presentation to the user.

For example, when a resource identifier res\_ID\_IP and a user parameter "49" for the environment "Germany" are provided, the lookup object may contain information as shown in Table 3.

res_ID_IP	"Gewerblicher Rechtsschutz"
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Table 3

In case a user parameter "01" for the environment "United States" is selected, a lookup object may contain information as outlined in Table 4.

res_ID_IP	"Intellectual Property"
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Table 4

The above-described lookup objects contain further resource identifiers and resource data.

Further, for each language identifier, a plurality of lookup objects may be provided, for example, depending on applications and requirements.

The embodiment described with reference to Fig. 5b provides a two-step operation to retrieve the required resource data, by first identifying a lookup object corresponding to the selected user identifier, e.g. selected language, and then by retrieving the resource data using the resource identifier. Accordingly, an application independent of a user environment may be executed and localized information may be introduced into, for example, frames for presentation to a user.

Referring to Fig. 5c, that figure illustrates a flow chart of a process performed by the resource program in accordance with another embodiment consistent with methods, systems, and articles of manufacture consistent with the present invention. Similar to the embodiment described with reference to Fig. 5a, the embodiment depicted in Fig. 5c illustrates steps performed by the resource program for retrieving resource data for presentation to one or a plurality of users.